

1. Record Nr.	UNINA9910967399303321
Titolo	Rheological Measurement / / edited by A.A. Collyer, D.W. Clegg
Pubbl/distr/stampa	Dordrecht : , : Springer Netherlands : , : Imprint : Springer, , 1998
ISBN	94-011-4934-8
Edizione	[2nd ed. 1998.]
Descrizione fisica	1 online resource (XXII, 779 p.)
Disciplina	620.1
Soggetti	Mechanics, Applied Solids Chemistry, Technical Mechanics Materials - Analysis Polymers Solid Mechanics Industrial Chemistry Classical Mechanics Characterization and Analytical Technique
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Includes index.
Nota di contenuto	One Small Strain Measurements -- 1 Oscillatory rheometry -- 2 Computer-aided methods in rheometry -- 3 Rheological studies using a vibrating probe -- 4 Dynamic mechanical analysis using complex waveforms -- Two Large Strain Measurements -- 5 Capillary rheometry -- 6 Slit rheometry -- 7 Viscous heating -- 8 Sliding plate and sliding cylinder rheometers -- 9 Rotational viscometry -- 10 Normal stress differences from hole pressure measurements -- 11 Using large-amplitude oscillatory shear -- 12 Rate- or stress-controlled rheometry -- 13 Transient rheometry -- 14 Commercial rotational rheometers -- Three Extensional and Mixed Flows -- 15 Converging dies -- 16 Recoverable elastic strain and swelling ratio -- 17 Elongational rheometers -- 18 Squeeze flow -- Four Specialized Rheometers -- 19 Flow visualization in rheometry -- 20 Rheological measurements on small samples -- 21 Rheometry for process control -- 22 Interfacial

rheology.

Sommario/riassunto

In an area as vast and important as rheology, it is essential that the experimentalist understands the underlying theories and shortcomings of the measurement technique used, that they are aware of the likely microstructure of the fluid under study and that from this they can appreciate how the fluid and the measuring system interact with each other. This major handbook, written by an international group of experts in the range of rheological techniques, presents the state of the art in rheological measurement, and concentrates on the techniques and underlying physical principles. The second edition, fully revised and updated to include new techniques is invaluable to polymer and materials scientists, engineers and technologists, and anyone else making rheological measurements on materials whether they be polymeric, biological, slurries, food or other complex fluids.